

Patent Claims:

1. Method of determining the pressure of a fluid or the differential pressure prevailing at an actuator, characterized in that an electromagnetically drivable actuator (4) is used for pressure measurement which
  - comprises an electromagnetic arrangement in which a mechanical actuating element is movable by means of actuation of an exciter coil, and
  - comprises a valve actuating device for opening and closing the actuator, with the actuating element exerting a mechanical force for opening and/or closing the actuator on the valve actuating device (1), and an electric control circuit is used to control the position of the valve actuating device or the magnetic force, in which the hydraulic force acting on the valve actuating device is preferably measured electrically by measuring the magnetic force that acts on the actuating element, and the pressure in the fluid line and/or the pressure difference in the actuator is determined therefrom.
2. Method as claimed in claim 1, characterized in that the actuator is mounted into a hydraulic brake control unit and, beside the function as a sensor element, this element is additionally used as an actor element for the task of pressure control.

3. Method as claimed in claim 1 or 2,  
c h a r a c t e r i z e d in that a resetting element  
(2) is provided to open or close the closing element  
when the exciter coil is not excited, and a valve seat  
(3) is provided into which the closing element engages  
to open or close the actuator.
4. Method as claimed in at least any one of the preceding  
claims,  
c h a r a c t e r i z e d in that previously defined  
individual parameters, characteristic curves, or  
characteristic fields are used for the determination of  
a current to position the valve actuating device, and  
these individual parameters, characteristic curves, or  
characteristic fields are determined in particular by a  
calibration routine measuring the actuator in the  
pressureless condition.
5. Method as claimed in claim 4,  
c h a r a c t e r i z e d in that for the calculation  
of the actuator-related parameters, characteristic  
curves or characteristic fields, the opening travel  $l$   
and/or the spring force  $F_{\text{spring}}$  and/or the magnetic  
resistance of the actuator are determined.
6. Method as claimed in at least any one of claims 4 or 5,  
c h a r a c t e r i z e d in that a calibration  
routine is executed in which general parameters  $KG_{\text{gen}}$   
related to the line of products are taken into account  
in addition to the actuator-related parameters  $KG_{\text{ind}}$   
which are established in a measuring routine.

7. Method as claimed in at least any one of claims 4 to 6, characterized in that the tappet force and/or the magnetic resistance  $R_M$  are determined in the calibration routine in the completely opened and/or completely closed position of the actuator.
8. Method as claimed in at least any one of claims 1 to 7, characterized in that the magnetic force is determined from the magnetic flux.
9. Method as claimed in at least any one of claims 4 to 8, characterized in that the voltage induced at the exciter coil as a result of a current variation is measured and more particularly integrated.
10. Electrohydraulic pressure control device including at least one actuator for controlling the pressure, characterized in that an actuator provided for pressure control is used to measure the pressure, and the method according to at least any one of claims 1 to 9 is implemented in the pressure control device in particular.